



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
**COMMISSION ON WATER RESOURCE MANAGEMENT**  
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**COMMISSION ON WATER RESOURCE MANAGEMENT**

November 20, 2013  
Honolulu, Hawaii

Application for a Stream Channel Alteration Permit (SCAP.3851.3)  
City and County of Honolulu, Department of Design and Construction  
West Loch Golf Course Drainage Improvements  
Honouliuli Stream, Ewa, Oahu (TMK (1) 9-1-017:060)

**APPLICANT:**

City and County of Honolulu  
Department of Design and Construction  
650 South King Street, 11<sup>th</sup> Floor  
Honolulu, HI 96813

**LANDOWNER:**

Same

**SUMMARY OF REQUEST:**

The West Loch Golf Course was designed as a recreational facility and a flood control project. The Honouliuli Stream runs through the site and exits into the West Loch of Pearl Harbor. The stream flow through the golf course was designed to carry a 10-year storm. However, when there are storms greater than the 10-year storm design capacity, the golf course floods and silt settles out on the fairways before flowing into Pearl Harbor.

The City and County of Honolulu ("City") is applying for a Stream Channel Alteration Permit (SCAP.3851.3) to improve drainage by capturing and removing silt from smaller storms to a) maintain the stream capacity for the larger storms, and b) reduce flooding and silt deposits of the golf course fairways. The City proposes to replace the existing ford crossing pipe culvert and cart path with a box culvert to improve streamflow during storms and reduce silt deposits within the stream. The improvements will also accommodate runoff from a new ground spring. The construction will include a new silt basin, repair and maintenance of an existing silt basin, a new concrete box culvert, and restoration of the flow capacity throughout the golf course by vegetation and sediment removal.

**LOCATION:** Honouliuli Stream, Ewa, Oahu, TMK (1) 9-1-017:060

See Exhibits 1 and 2.

**BACKGROUND:**

In 1996, heavy rain caused the Honouliuli Stream to overflow, flood and damage several fairways and ponds. The damage caused the golf course to shut down for several months for repairs. Since 1996, the golf course has been subject of other flooding events which led to a significant loss of revenues.

On August 28, 2013, the Commission received a completed SCAP application from Environmental Communications, Inc., on behalf of the applicant.

On September 24, 2013, a letter acknowledging receipt of the SCAP application was sent to the applicant and Environmental Communications, Inc., initiating the Commission's process for agency review of the project.

**DESCRIPTION:**

The Division of Aquatic Resources and the National Hydrography Dataset list the stream as intermittent from its headwaters located in the Waianae Mountains, through the golf course and then as drains into West Loch, Pearl Harbor. The watershed area is 23 square miles. The stream is 32 miles long. The stream is highly degraded in its lower reaches as it passes through the site and consists of introduced and weedy species of flora. No fish were observed onsite. There are no instream or off stream uses in the project area. The waterway is unlined and consists of silt and grass. Typical of golf courses, the site consists of maintained grass areas, ponds serve as drainage basins and landscape features, many existing and introduced trees, and other landscape vegetation.

**New Silt Basin with Inlet and Outlet Structures:** A new silt basin is proposed on the 6th hole of the golf course to slow and filter waters from the stream as it enters the golf course property (Exhibit 3). This basin is intended to detain normal and design storm flow runoff and allow silt to settle out before the water is released onto the golf course and back into the stream. This will reduce silting of the stream and improve stream flow during larger storm events. Water will be released more slowly back into the stream.

The design stormwater will enter into the silt basin through a concrete and riprap inlet structure (lower left of Exhibit 3). The rectangular shaped basin can collect over 900 cubic yards (cy) of silt and be removed as needed. At the outlet end of the basin (top right of Exhibit 3), stormwater will be released by a concrete and riprap lined outlet structure that will flow back into the stream. The stream bank at the outlet structure will be lined with riprap for durability and erosion control. The floor of the basin will be lined with concrete to facilitate the removal of accumulated silt while the side slopes will be grassed. The new silt basin is presently vacant and covered with natural vegetation. Excavated material (inlet – 92.2 cy and outlet – 101.1 cy) will be removed from the site.

Replace Culvert and 3<sup>rd</sup> hole Drainage Improvements: The existing ford crossing pipe culvert consists of four 72-inch drainpipes that are partially topped by a concrete cart path (Exhibit 4). This system fills with silt, is difficult to clean, and reduces capacity for normal and design storm flow.

The proposed box culvert will be located upstream of the existing pipe culvert and will consist of three precast concrete box culverts that will be easier to clean. It will handle both normal and larger storm flow better. The new culvert will be topped with a concrete cart path. When construction is complete, the old culvert and cart path will be removed.

Diversion of the stream will be done in three phases. Diversions will be constructed of plywood sheets (4' x 8' x 5/8") that divert flow into a 42" PVC pipe. Excavated material (140.6 cy) will be removed from the site. Fill will consist of boulder riprap, concrete fine aggregate and rock. Upon completion, the proposed action will have minimal impact to the existing stream and will be easier to clean. The estimated time for construction within the stream channel is one month per location.

Construction activities include but are not limited to the demolition and removal of the existing culvert, installation of best management practices (BMP), clearing and grubbing, excavation, grading, and erosion control measures.

Ground Spring Culvert: A spring recently emerged. It flows across the 3<sup>rd</sup> fairway. Inlet and outlet structures and an 18" drain pipe will be constructed to allow spring water to flow across the fairway and into the stream.

Restoration and Maintenance of Honouliuli Stream Flow: Restoration of streamflow will include removal of sediment and vegetation from the stream to its original construction plan profile and cross section. Work will be performed by excavator and backhoe. HDPE liners or erosion control fabrics will be installed to minimize vegetation from growing and provide erosion protection.

Restoration of Ponds: In addition to the clearing and re-establishment of streamflow, a pond located at the 6th hole will be returned to its original design capacity by removing large vegetation and dredging of sediment. Work will be performed by excavator and backhoe.

#### ANALYSIS:

##### Agency Review Comments:

City and County of Honolulu, Department of Planning and Permitting (DPP): The Department of Design and Construction explained that the Golf Course project is comprised of multiple phases. This SCAP pertains to Phase 1 only. DPP requires a grading permit. Plans were approved in July 2013.

Department of Land and Natural Resources (DLNR), Aquatic Resources: The proposed activity is not expected to have any significant impact on the aquatic resource values in this area. The installation and construction of 3<sup>rd</sup> hole culvert within the stream channel should not block the total stream flow. It will be performed in phases to accommodate the upstream migration of post larval stream fauna and allow the passage of larval drift to the ocean should recruitment or spawning occur especially during rainfall events. The inlet for the silt basin should be above the elevation of mean stream flows to prevent water from entering the silt basin under normal stream flows and to avoid entrapping post larval drift of stream animals. The slope of the riprap stream wall (where the silt basin outlet enters Honouliuli Stream) should be vertical or undercut to prevent the migration and entrapment of post larvae stream animals into the silt basin during high stream flows.

Mitigation measures and BMPs should be implemented during construction of the culvert crossing and the demolition and removal of the existing pipes within the stream channel on the 3<sup>rd</sup> Hole culvert. Erosion control steps should be taken to minimize the potential for erosion, siltation and pollution of the aquatic environment.

- 1) Plant and cover lands denuded of vegetation as quickly as possible to prevent erosion and the vegetation cleared along stream banks should be removed and prevented from falling into the stream environment;
- 2) Schedule site work (particularly construction of the culverts and removal of the drain pipes) during periods of low stream flow and minimal rainfall; and,
- 3) Prevent construction materials, petroleum products, debris and landscaping products from falling, blowing or leaching into the aquatic environment.

DLNR, Land Division: No objections.

DLNR, State Parks: No objections.

Department of Health (DOH), Office of Environmental Quality Control: The applicant's proposed action triggered an environmental assessment because County lands and funds will be used for site improvements (HRS §343-5(a)). On April 23, 2013, a Final Environmental Assessment and Finding of No Significant Impact for the West Loch Golf Course Drainage Improvements were published in the Environmental Notice by the Office of Environmental Quality Control.

Staff Review:

Haw. Rev. Stat. § 174C-71(3) directs the Commission to protect stream channels from alteration whenever practicable to provide for fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses; and requires a permit from the Commission prior to undertaking a stream channel alteration.

The proposed improvements are intended to capture and remove silt from smaller storms to maintain stream capacity for larger storms. The result will be cleaner water flowing through the

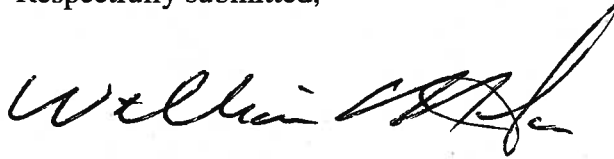
November 20, 2013

golf course during design storm conditions, and ultimately, cleaner waters entering Pearl Harbor. The improvements are not anticipated to have an adverse impact on existing uses in the area.

RECOMMENDATION:

1. Approve a Stream Channel Alteration Permit (SCAP.3851.3) for the City and County of Honolulu, Department of Design and Construction's West Loch Golf Course Drainage Improvements, Honouliuli Stream, Ewa, Oahu, TMK (1) 9-1-017:060 subject to the standard conditions in Exhibit 5.

Respectfully submitted,

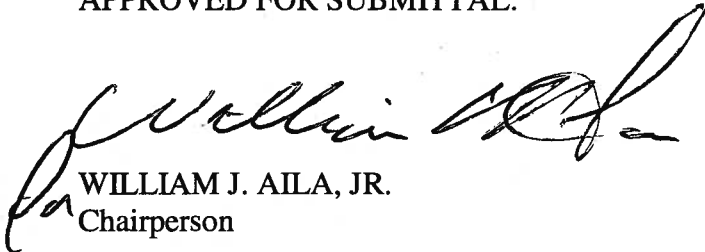


WILLIAM M. TAM  
Deputy Director

Exhibits:

1. Location Map.
2. Golf Course Map.
3. Silt Basin Erosion Control Plan.
4. 3<sup>rd</sup> Hole Culvert Crossing Plan.
5. Standard Stream Channel Alteration Permit Conditions.

APPROVED FOR SUBMITTAL:



WILLIAM J. AILA, JR.  
Chairperson

Location Map.



**EXHIBIT 1**

[illegible]

**EXHIBIT 3**



## EXHIBIT 4

STANDARD STREAM CHANNEL ALTERATION PERMIT CONDITIONS  
(Revised 9/19/07)

1. The permit application and staff submittal approved by the Commission at its meeting on November 20, 2013, shall be incorporated herein by reference.
2. The applicant shall comply with all other applicable statutes, ordinances, and regulations of the Federal, State and county governments.
3. The applicant, his successors, assigns, officers, employees, contractors, agents, and representatives, shall indemnify, defend, and hold the State of Hawaii harmless from and against any claim or demand for loss, liability, or damage including claims for property damage, personal injury, or death arising out of any act or omission of the applicant or his successors, assigns, officers, employees, contractors, and agents under this permit or related to the granting of this permit.
4. The applicant shall notify the Commission, by letter, of the actual dates of project initiation and completion. The applicant shall submit a set of as-built plans and photos of the completed work to the Commission upon completion of this project. This permit may be revoked if work is not started within six (6) months after the date of approval or if work is suspended or abandoned for six (6) months, unless otherwise specified. The proposed work under this stream channel alteration permit shall be completed within two (2) years from the date of permit approval, unless otherwise specified. The permit may be extended by the Commission upon showing of good cause and good-faith performance. A request to extend the permit shall be submitted to the Commission no later than three (3) months prior to the date the permit expires. If the commencement or completion date is not met, the Commission may revoke the permit after giving the permittee notice of the proposed action and an opportunity to be heard.
5. Before proceeding with any work authorized by the Commission, the applicant shall submit one set of construction plans and specifications to determine consistency with the conditions of the permit and the declarations set forth in the permit application.
6. The applicant shall develop site-specific, construction best management practices (BMPs) that are designed, implemented, operated, and maintained by the applicant and its contractor to properly isolate and confine construction activities and to contain and prevent any potential pollutant(s) discharges from adversely impacting state waters. BMPs shall control erosion and dust during construction and schedule construction activities during periods of low stream flow.
7. The applicant shall protect and preserve the natural character of the stream bank and stream bed to the greatest extent possible. The applicant shall plant or cover lands denuded of vegetation as quickly as possible to prevent erosion and use native plant species common to riparian environments to improve the habitat quality of the stream environment.
8. In the event that subsurface cultural remains such as artifacts, burials or deposits of shells or charcoal are encountered during excavation work, the applicant shall stop work in the area of the find and contact the Department's Historic Preservation Division immediately. Work may commence only after written concurrence by the State Historic Preservation Division.

EXHIBIT 5